

# Covid-19 Impacts to Washington's Aerospace Sector

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# Aerospace Industry Indicators

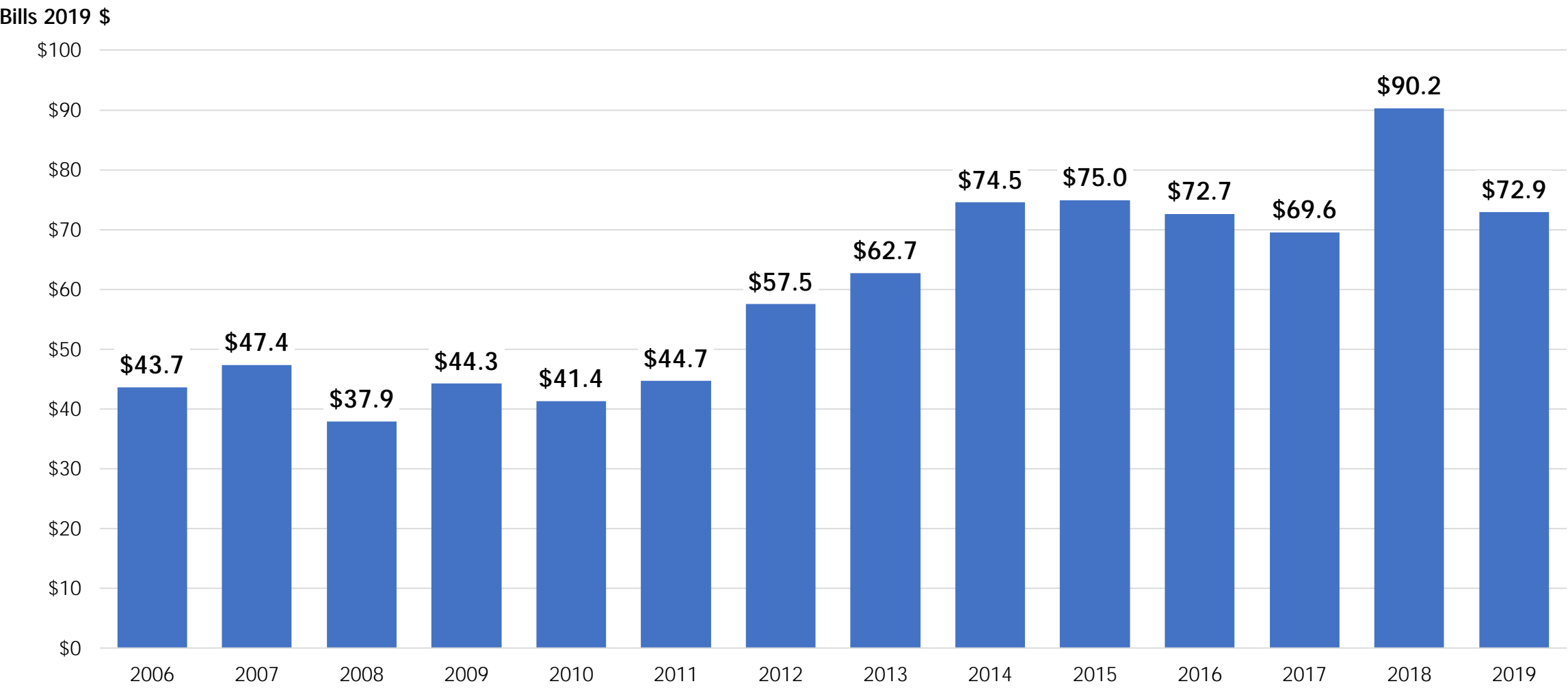
## Leading metrics and indicators

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- **Aerospace is major employer, even during this downturn.**
  - Aerospace employment: 82,700 in 2020 (annual average)
  - ~3% statewide nonfarm labor in 2019.
- **Aerospace is a source of good wages for blue collar workers**
  - Average wage (pre-benefits): \$118,800
  - Nearly 70% higher than statewide wage.
- **Supply chain relies on Boeing work.**
- **Major source of revenues.**
  - Gross business income in 2019: \$73 billion
  - More than 7% statewide GBI
- Total economic impact (2019): more than 240,000 jobs.
- “Perfect storm” of events impacting Washington state’s aerospace sector
- **Boeing largest U.S. exporter.** But affected by global downturn and uncertainty. Exports hit by trade war and pandemic.

# Gross Business Income

Washington state, 2006-2019 (2019 \$)

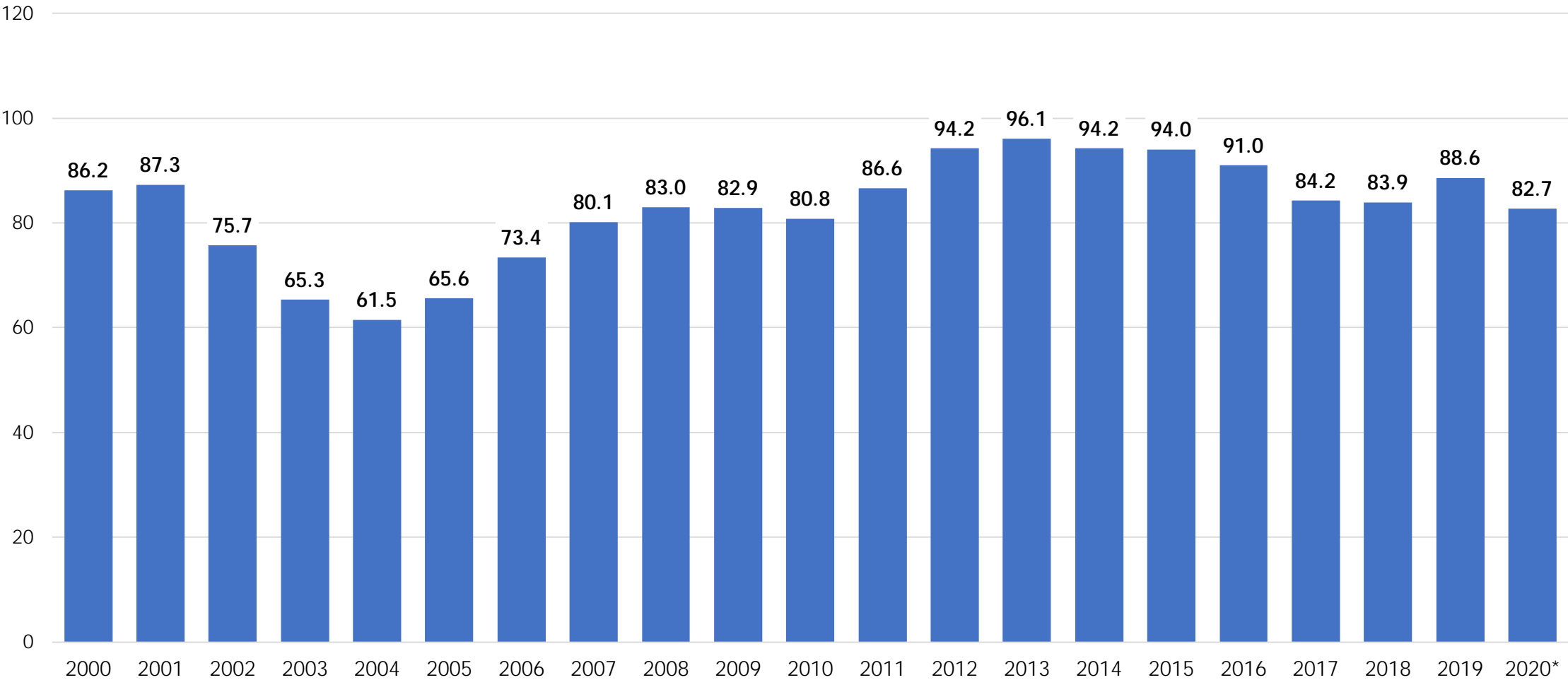


Source: Washington State Department of Revenue, 2020; Federal Reserve Bank of St. Louis, 2020.

# Aerospace Employment

Washington state, 2000-2020 (est.)

Thousands of Jobs



Source: Washington State Employment Security Department, 2020.  
\*Estimated annual employment based on employment through September YTD.

# Economic Impacts of Aerospace in Washington State

Statewide impacts in 2019

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## Economic Impacts, 2019

	Direct	Indirect	Induced	Total
Employment	88,600	26,000	125,600	240,200
Labor Income (mils \$)	\$13,512.1	\$2,074.6	\$7,047.2	\$22,634.0
Output (mils \$)	\$72,910.9	\$5,899.9	\$20,516.9	\$99,327.7

## Economic Multipliers, 2019

Total jobs per direct job	2.71
Total output per \$ direct output	1.36
Total labor income per \$ direct output	0.31

*Sources: Washington State Office of Financial Management, 2020; Author's calculations.*

# The “Perfect Storm”

Three overlapping events in 2019 and 2020

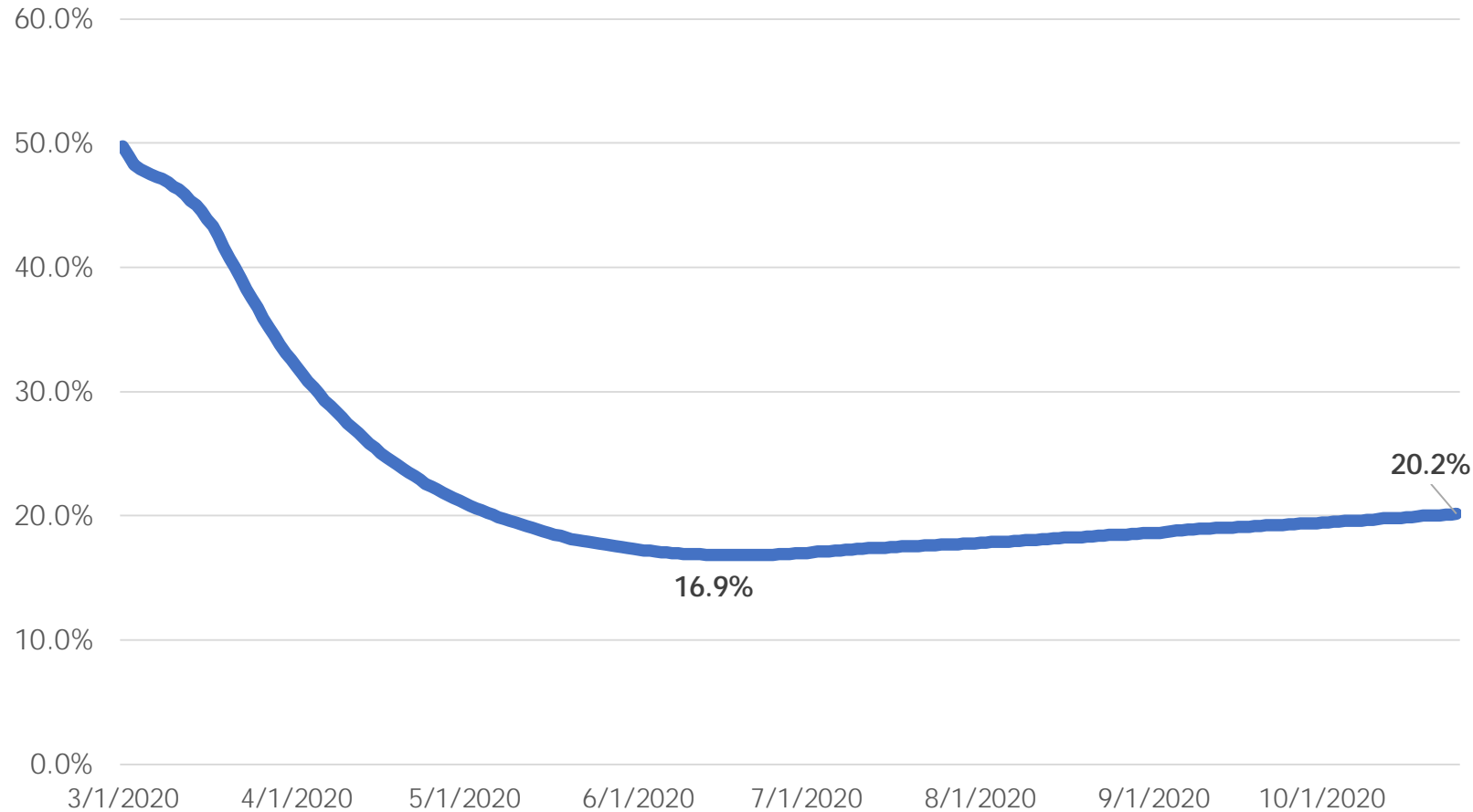
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- 737 MAX grounding
  - Lost revenues, laid off workers.
- U.S.-China trade war
  - Steep decline in orders from China, largest market for Boeing aircraft outside the U.S.
- Coronavirus pandemic
  - Impact to airlines and delayed or cancelled orders.

# Most Immediate Impact: Airlines

Precipitous decline in air travel since March 1, 2020

## Cumulative Air Travelers, U.S., as % 2019 for same period



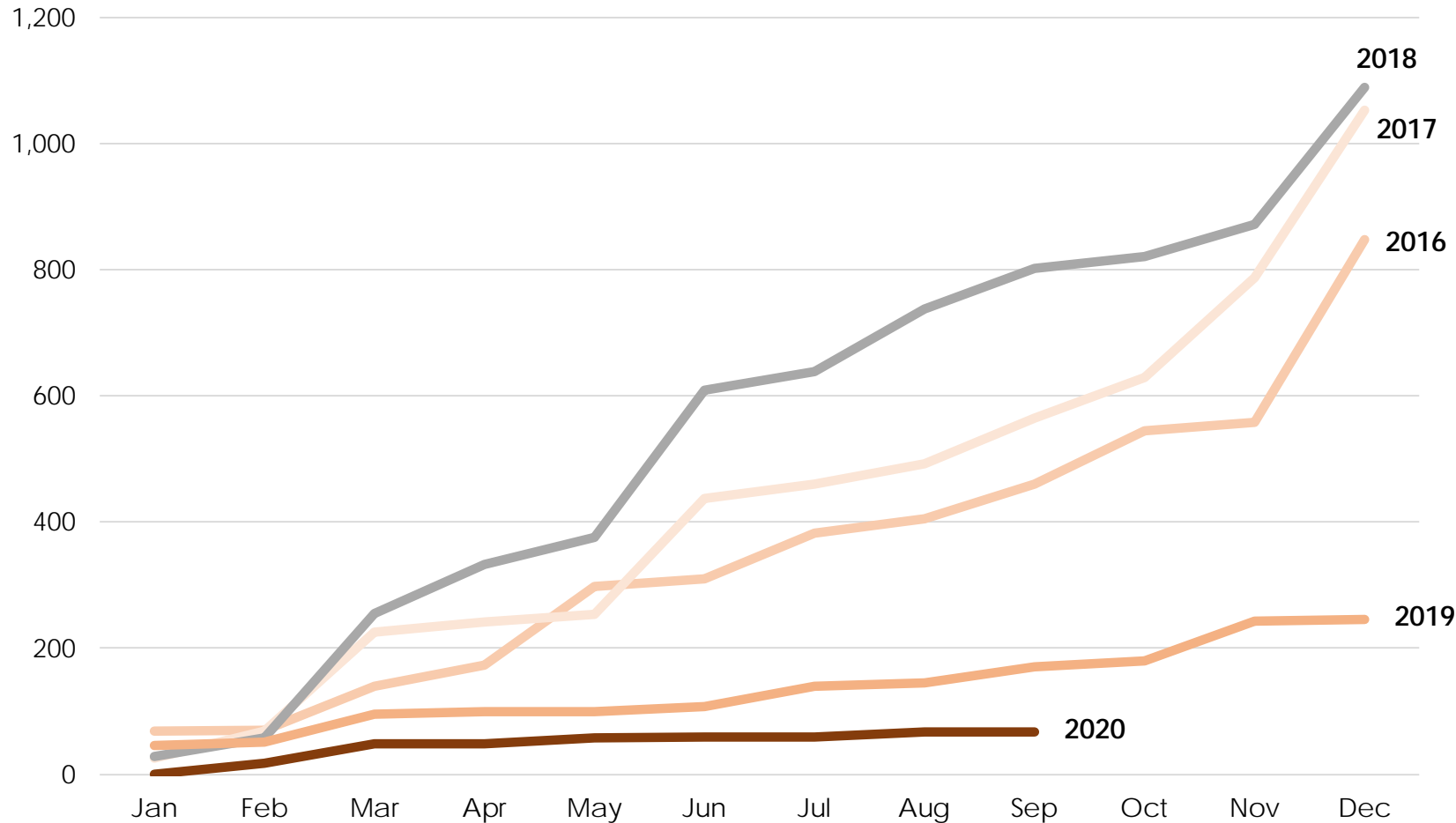
- Total travels since March at only 20% of levels in 2019.
- Less travelers can translate into fewer flights, resulting in less belly cargo space for exporters.

Sources U.S. Transportation Security Administration, 2020. Data based on daily checkpoint numbers.

# Boeing New Orders by Month

Cumulative monthly orders: 2016, 2017, 2018, 2019, and 2020 (through September)

Cumulative new orders by month



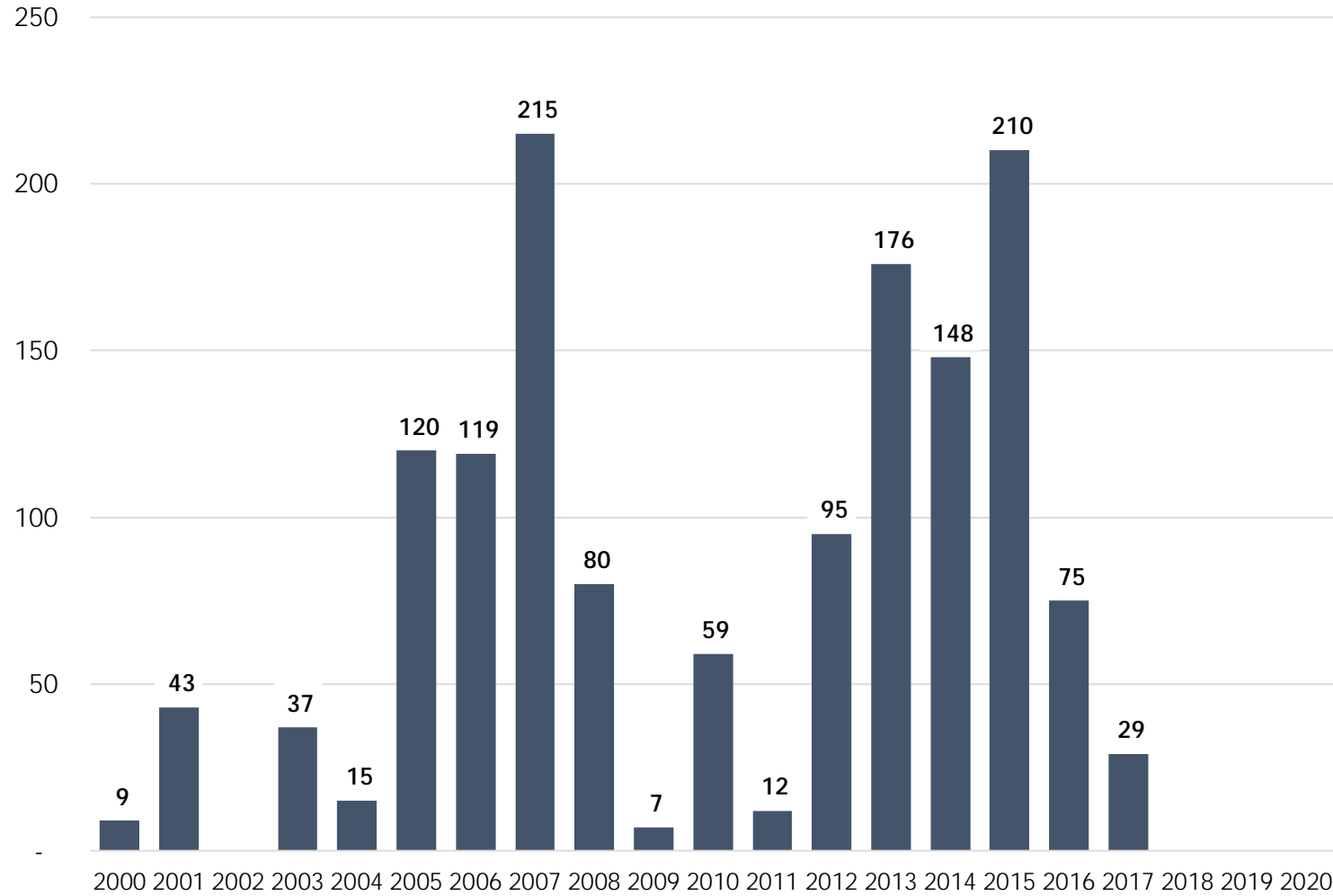
Data source: The Boeing Company, 2020.

- 67 new orders through September 2020, compared with 803 in September 2018 YTD.
- 18 new orders since April 2020.
- Overall, 381 cancellations for Boeing aircraft (all markets) September YTD.
- Backlog: 5,126 aircraft.



# Boeing New Orders (Gross) from China

2010 to 2020 (through September)

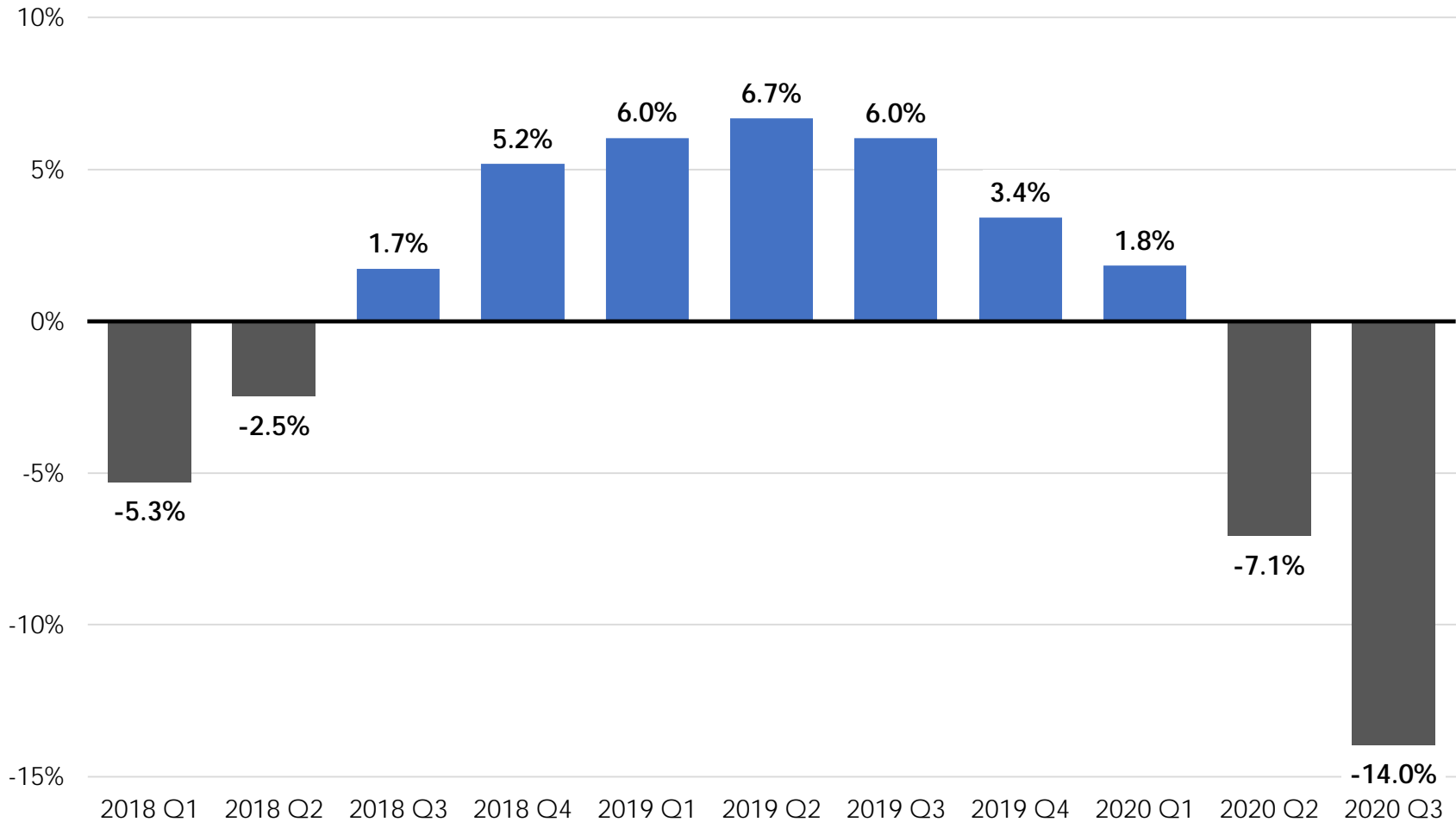


Source: The Boeing Company, 2020.

- No new orders since 2017.
- 122 existing backlog orders, however (as of September 30).
- Boeing aircraft were not included in China's retaliatory tariff list during the height of the trade war.
- China = 8% of all orders over past 10 years.
- 67 new gross orders.

# Aerospace Employment

Washington state, year-over-year quarterly employment change, 2018 Q1 to 2020 Q3

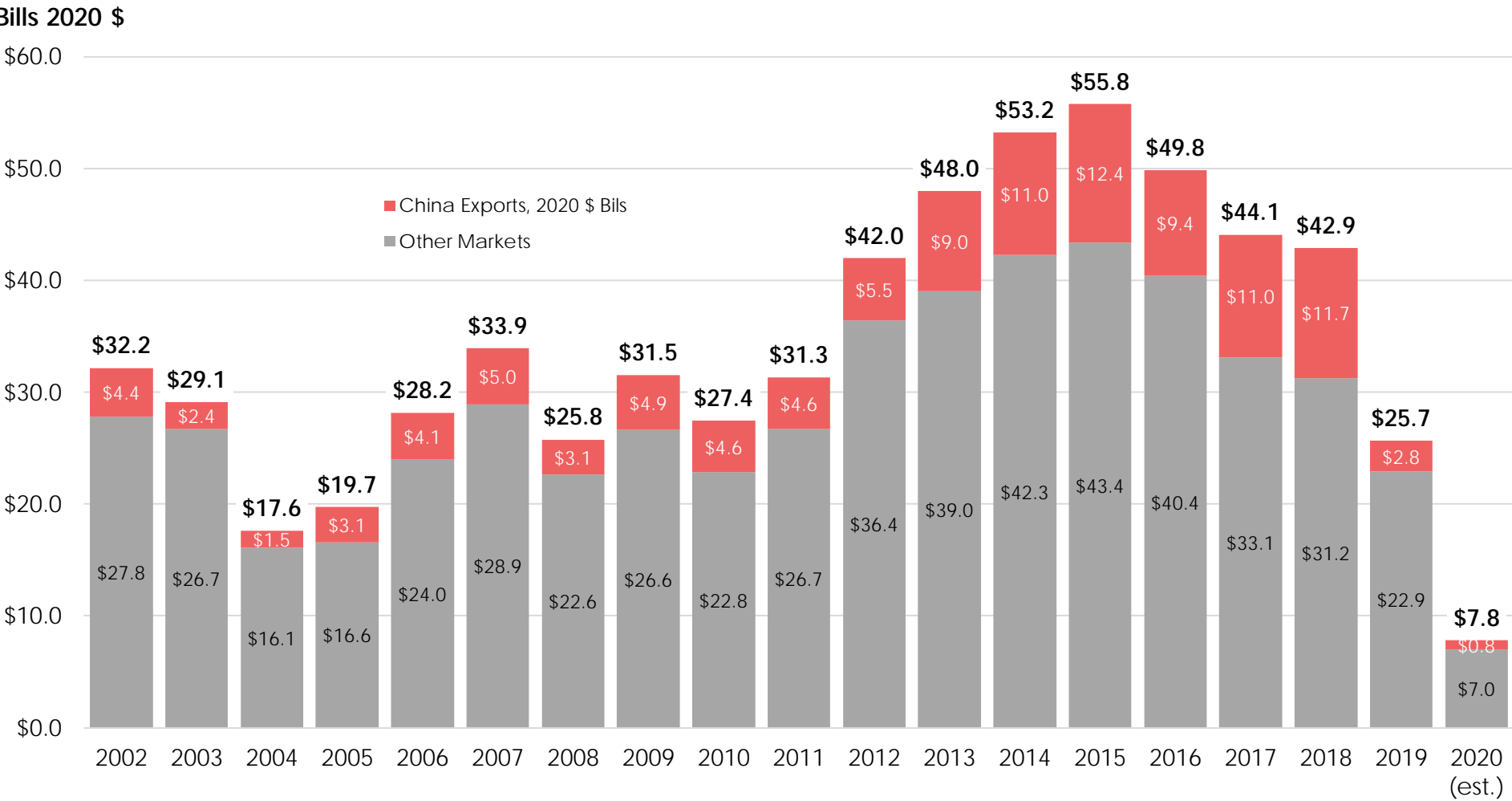


- Quarterly employment down 14% compared with Q3 2019.
- Overall, aerospace sector has shed nearly 6,000 jobs through first three quarters of 2020 compared with first three quarters of 2019.

Source: Washington State Employment Security Department, 2020.  
\*Estimated annual employment based on employment through September YTD.

# Aerospace Exports

Washington state, 2002-2020 August YTD (2020 \$)



- Decline in sales to China began during trade war.
- Aerospace exports through August 2020 down more than 69% compared with August 2019 YTD.

Sources: U.S. Census Bureau, 2020; Federal Reserve Bank of St. Louis, 2020.

# Boeing Orders and Economic Outlook

2011-2020, share of total gross orders and IMF forecast

## Largest Markets for Gross Boeing Orders, 2011-2020, and Economic Forecast

Market	Share Total	<i>GDP Growth (actual for 2019, and forecast)</i>			
		2019	2020	2021	2021-2025
USA	27.8%	2.2%	-4.3%	3.1%	2.4%
China	7.8%	6.1%	1.9%	8.2%	6.2%
Ireland	6.6%	5.9%	-3.0%	4.9%	3.6%
United Arab Emirates	6.0%	1.7%	-6.6%	1.3%	2.2%
India	4.1%	4.2%	-10.3%	8.8%	7.8%
Indonesia	3.5%	5.0%	-1.5%	6.1%	5.3%
Singapore	3.2%	0.7%	-6.0%	5.0%	3.0%
Turkey	2.4%	0.9%	-5.0%	5.0%	3.9%
Hong Kong	2.3%	0.0%	-7.5%	3.7%	3.1%
Vietnam	2.2%	7.0%	1.6%	6.7%	7.0%
United Kingdom	2.1%	1.5%	-9.8%	5.9%	2.9%
All other markets	31.9%				
<b>Total, World</b>	<b>100.0%</b>				

- Global economy projected to contract 4.4% in 2020.
- Advanced economies: 5.8%.
- Eurozone: -8.3%.
- Latin America and Caribbean: -8.1%.
- Emerging and developing Asia: 1.7%.

Source: The Boeing Company, 2020; International Monetary Fund World Economic Outlook, October 2020.

# Thank You

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